

Please amend the above-identified patent application, without prejudice, as follows:

IN THE CLAIMS:

~~Cancel~~ claim 16.

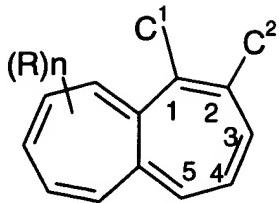
~~Amend~~ claims 1, 17-19, 23 and 24 by replacement as follows:

Sub R!
D 1 1. (Twice amended) Method for information storage and data processing comprising the step of thermo-inducing or photo-inducing double-bond shifts in substituted [4n]-annulenes which are substituted by at least one group comprising an extended conjugated π -electron system which is in conjugation with the π -electron system of the [4n]-annulene core, thus generating transitions between two different conjugation states with at least one substituent, resulting in different UV/VIS spectra of the double-bond shifted isomers of [4n]-annulene, which provides the possibility to use distinct conjugation states (conjugation on-state and conjugation off-state) for information storage and data processing.

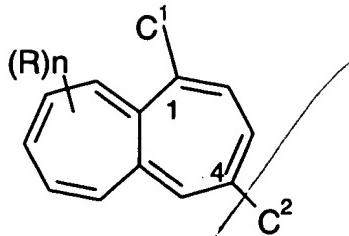
Sub R!
D 2 2 17. (Amended) [4n]-heptalenes according to claim 26, whereby, C¹ and C² represent independently from each other a hydrogen atom, a methyl group, a phenyl group, an ethyl ester group, a methyl ester group, a (E)-PhCH=CH-group, a (E)-4-MeOC₆H₄CH=CH-group, a (E)-4-ClC₆H₄CH=CH-group, a 4-MeOC₆H₄-group, a -CH=CH-CH=CH-C₆H₅ group, a -CH=CH-C₆H₄NO₂-4 group, a -CH=CH-C₆H₄OMe-4 group, with the proviso that a heptalene being substituted by a methyl ester group at the position 1, a -CH=CH-CH=CH-C₆H₅ group at the positions 2 and 5, an isopropyl group at the position 7 and a methyl group at the position 10 is excluded.

Sub R!
D 2 2 18. (Amended) [4n]-heptalenes according to claim 26, whereby said further substituents R are selected from the group comprising substituted or unsubstituted C₁-C₁₂-alkyl groups or photoactive diazo-containing groups, like azobenzene.

19. (Twice Amended) Method for the preparation of substituted heptalenes of the formula (I) or (II), according to claim 26



(I)



(II)

whereby C¹, C², R and n are as above defined,
comprising the steps of

(a) obtaining a heptalene-dicarboxylate by a reaction of
a correspondingly substituted azulene with acetylenedicarboxylate,
and optionally

(b) transforming at least one carboxylic group or another
substituent that was entered by the preliminary Diels-Alder reaction
into the desired conjugated substituent having an extended π-electron
system.

D2
DRAFT

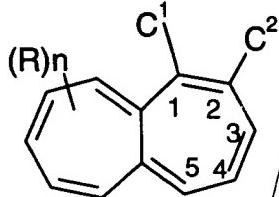
23. (Amended) An optical storage device comprising at least one
substituted [4n]-annulene according to claim 26.

D3

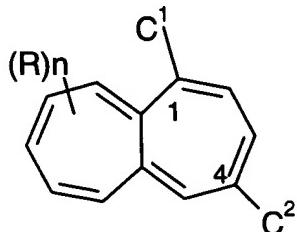
24. (Amended) A non-linear optical device comprising at least one
substituted [4n]-annulene according to claim 26.

✓
Insert new claims 26 and 27 as follows:

26. (new) Substituted [4n]-heptalenes of the general formula (I) or (II) being optically and/or
thermally switchable, based on thermal or photochemical double-bond shifts (DBS),



(I)

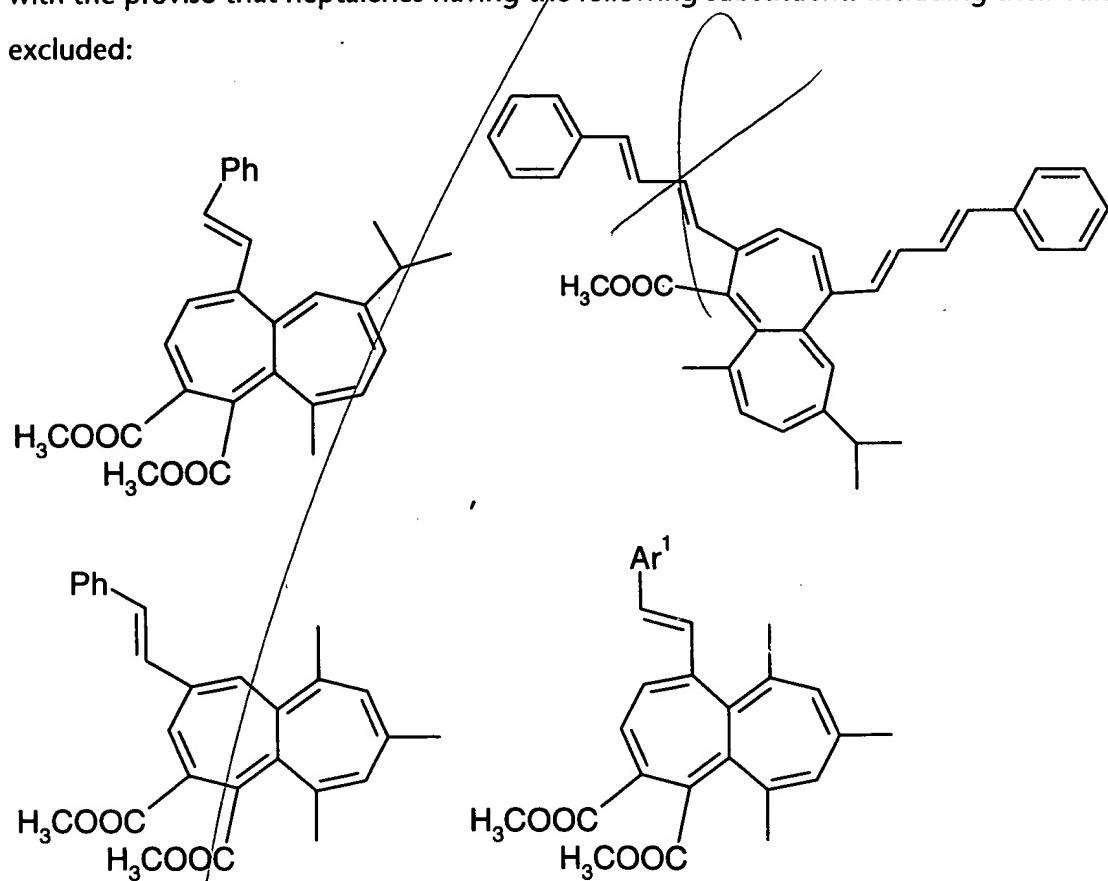


(II)

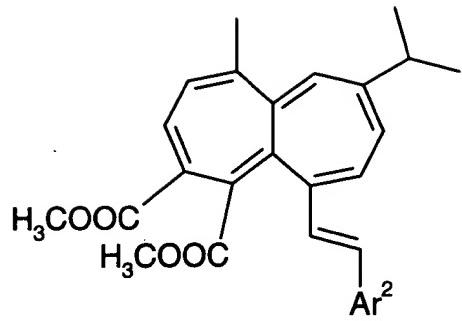
whereby C¹ and C² represent independently from each other a hydrogen atom, a substituted or unsubstituted C₁-C₁₂-alkyl group, a substituted or unsubstituted C₁-C₁₂-alkoxy group, a substituted or unsubstituted aryl-C₁-C₁₂-alkyl group, a substituted or unsubstituted C₁-C₁₂-alkenyl group, a substituted or unsubstituted C₁-C₁₂-conjugated alkenyl group, a substituted or unsubstituted C₁-C₁₂-alkinyl group, a substituted or an unsubstituted phenyl group, a substituted or an unsubstituted heterocyclic group, a cyano group, a nitro group, a thiocyanate group, a C₁-C₁₂-ester group being optionally polymerisable with copolymers, with the proviso that at least one of said substituents C¹ and C² contains an extended conjugated π -electron system which is in conjugation with the π -electron system of the heptalene core, and

whereby said [4n]-heptalenes can comprise at least one further substituent R being selected from the above indicated groups with n being 0-8,

provided that if one of the at least one further substituents R is an isopropyl group at the position 9 of the heptalene ring, the substituent at the position 6 must not be a methyl group, and with the proviso that heptalenes having the following substituents including their valence isomers are excluded:



wherein Ar¹ is phenyl, 4-chloro phenyl or 4-methoxy phenyl, and



, wherein Ar² is phenyl or 4-methoxy phenyl.

Sub F3 → 27. (new) Substituted [4n]-annulenes according to claim 16, wherein at least one of the groups C¹, C² or R is a group -COO-(CH₂)_nOH, a group -COO-(CH₂)_nOOC-C(CH₃)=CH₂ or a group -COO-(CH₂)_nC₆H₄-4-CH=CH₂, wherein n ≥ 2.

*DA
cont.*